

In re Patent Application Serial No. 10/826,525
Charles D. Kim

Page 2

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) An impact-absorbing level comprising:
 - a body including a level face for measuring a surface, the body extending from a first end to a second end and having an outside contour at each end defining a body profile;
 - at least one vial mounted in the body at a predetermined angular relationship to the level face; and
 - at least one a first end cap fixed with respect to at least one the first end, the first end cap comprising an impact-resisting outer layer and an impact-compressing intermediate layer, the outer layer having an outside contour congruent to the body profile, the intermediate layer defining a rippled profile and having portions with an outside contour congruent to the body profile spaced apart by portions with an outside contour smaller and geometrically similar to the body profile, the intermediate layer fixed to the outer layer and having lower density than the outer layer, the intermediate layer positioned between the outer layer and the body;

whereby the first end cap absorbs impacts to the outer layer to prevent damage to the body.

2. (Currently Amended) The level of claim 1 wherein the at least one end cap comprises two end caps further comprising a second end cap fixed with respect to the first and second ends respectively, the second end cap comprising an impact-resisting second outer layer and an impact-compressing second intermediate layer, the second intermediate layer fixed to the second outer layer and having lower density than the second outer layer, the second intermediate layer positioned between the second outer layer and the body.

BEST AVAILABLE COPY

In re Patent Application Serial No. 10/826,525
Charles D. Kim

Page 3

3. (Original) The level of claim 1 wherein the outer layer is acrylonitrile butadiene styrene and the intermediate layer is thermoplastic rubber.

4. (Previously Presented) The level of claim 1 wherein the first end cap further comprises an impact-resisting inner layer having a higher density than the intermediate layer, the inner layer connecting the intermediate layer to the body.

5. (Currently Amended) The level of claim 2 wherein the outer layer is acrylonitrile butadiene styrene, the intermediate layer is thermoplastic rubber, and the inner layer is acrylonitrile butadiene styrene.

6-7. Cancelled

8. (Currently Amended) The level of claim 1 wherein the first end cap is adhered to the body.

9. (Currently Amended) In a level of the type having (a) a body extending from a first end to a second end, (b) a level face connected with respect to the body, the level face for measuring a surface, and (c) a vial mounted with respect to the body at a predetermined angular relationship to the level face, the improvement comprising a first dual-density end cap mounted to each the first end and a second dual-density end cap is mounted to the second end wherein each the end cap ~~has~~ has each have an outer layer, and an intermediate layer contiguous with the outer layer thereto, and an inner layer connecting the intermediate layer to the body, the outer layer being positioned most distal from the respective end and the intermediate layer having lower density than the outer and inner layers, whereby impact to the outer layer results in compression of the intermediate layer and dissipation of the impact to prevent damage to the level.

BEST AVAILABLE COPY

In re Patent Application Serial No. 10/826,525
Charles D. Kim

Page 4

10. (Currently Amended) The level of claim 9 wherein the intermediate layers compress more easily than the inner and outer layers.

11-14. Cancelled

15. (Currently Amended) The level of claim 9 ~~13~~ wherein the body has an outside contour at each end defining ~~defines~~ a body profile ~~at the ends~~, the outer layers having an outside contour congruent to ~~define outer profiles which match~~ the body profile, and the intermediate layers define rippled profiles, the intermediate layers including portions with an outside contour congruent to ~~matching~~ the body profile spaced apart by portions with an outside contour smaller and geometrically similar to ~~than~~ the body profile.

16. (Currently Amended) The level of claim 9 ~~13~~ wherein the outer layer is bonded to the intermediate layer, the intermediate layer is bonded to the inner layer, and the inner layer is bonded to the respective end for each end cap.

In re Patent Application Serial No. 10/826,525
Charles D. Kim

Page 5

17. (Currently Amended) A method of providing impact-absorption to a level, the method comprising:

- providing a level having a body defined by first and second ends, the body including a level face for measuring a surface and having an outside contour at each end;
- adhering a dual-density end cap to each end, each end cap extending outward from the respective end within the contour thereof and having an intermediate layer connected for connection with respect to the respective end and an outer layer secured to the intermediate layer and spaced apart opposite from the end thereby, each layer having at least one outer surface coplanar with the level face, the outer layer having ~~a an~~ outer surface and greater density than the intermediate layer,

whereby each end cap absorbs impacts ~~to the respective outer surface~~ by allowing the respective outer layer to resist the impact by moving toward the respective end during the impact through compression of the respective intermediate layer.

18. (Previously Presented) The method of claim 17 wherein each end cap further includes an inner layer abutting the respective end, the intermediate layer being spaced apart from the body by the inner layer and the outer layer being spaced apart from the inner layer by the intermediate layer.

19. (Previously Presented) The method of claim 18 wherein the intermediate layers have lower densities than the inner layers and the intermediate layers compress more than the inner layers during an impact.

In re Patent Application Serial No. 10/826,525
Charles D. Kim

Page 6

20. (Previously Presented) An impact-absorbing level comprising:

- a body including a level face for measuring a surface, the body extending from a first end to a second end;
- at least one vial mounted in the body at a predetermined angular relationship to the level face; and
- a first end cap fixed with respect to the first end, the first end cap comprising an outer layer, an intermediate layer, a web layer and an inner layer, the outer, web and inner layers being comprised of a first material and the intermediate layer being comprised of a second material having lower density than the first material, the intermediate and web layers being positioned between the outer and inner layers and connecting the outer layer to the inner layer, and the inner layer connecting the intermediate and web layers to the body;

whereby the first end cap absorbs impacts to the outer layer to prevent damage to the body.

21. (Currently Amended) The level of claim 1 wherein each layer has at least one outer surface coplanar with the level face.

22. (Currently Amended) The level of claim 2 4 wherein each ~~the~~ first end cap extends outward from the respective ~~first~~ end to the outer layer and the layers are in longitudinal alignment, the outer layer being spaced apart from and non-contiguous with the inner layer.

23. (Currently Amended) The level of claim 2 4 wherein each layer is monolithic.